HANDICRAFT FOR GIRLS

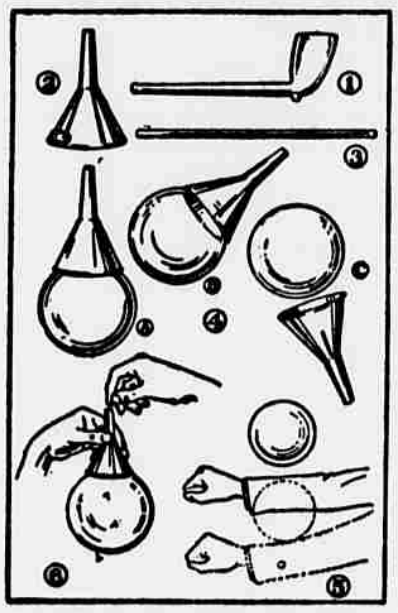
By DOROTHY PERKINS

SOAP BUBBLE FUN.

It is not necessary to have special soap or a patent blower to blow bubbles successfully. There is nothing better than castile or ivory soap for a solution, and a clay pipe like that in Fig. 1, which can be bought at a drug store, is as good as any blower on the market. But for large bubbles, the finest sort of a blower is a tin funnel about 2½ inches in diameter (Fig. 2). Probably your mother has one in her pantry. Another blower which you will find handy is a short lemonade straw (Fig. 3).

To make up the solution, shave the soap into a pan of warm water, putting in as much soap as the water will dissolve.

To make a bubble with the tin funnel, place the end into the solution,

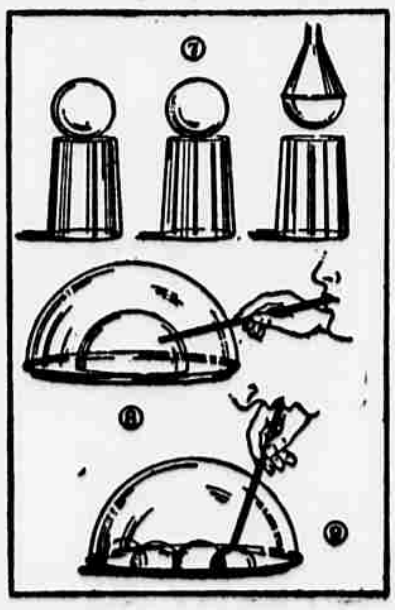


then lift it out gently, and if it is covered with a film blow upon the small end and a bubble will appear. Steps A, B and C (Fig. 4) indicate how to release the bubble by inverting the funnel and tossing the bubble out of it.

Fig. 5 shows how to bounce a bubble upon your arm. By dropping your arm slightly as the bubble descends, as indicated by the dotted lines, the bubble will land with less shock.

Fig. 6 shows how you can drop tacks into the funnel spout without bursting the bubble.

Place several glass tumblers upon a table, and blow a bubble upon each

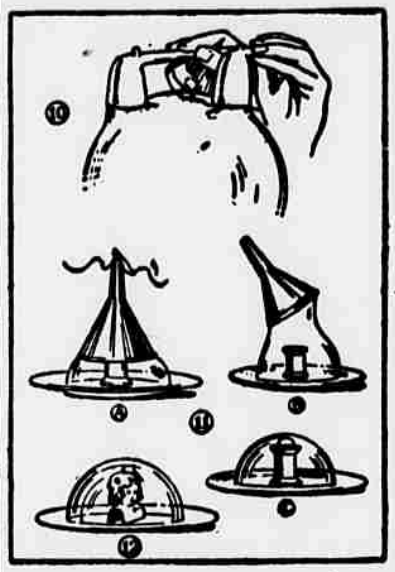


(Fig. 7), then add other tumblers and see how many bubbles you can place before the first ones burst.

Fig. 8 shows how to blow one bubble within another. First blow a large bubble on a pie tin having a depth of one-quarter inch of solution in it. Blow the bubble as you raise the funnel, then turn the funnel sidewise and slide it off of the bubble. The inner bubble is blown with a lemonade straw.

If you have two clay pipes, you can blow two bubbles, and then by bringing them together cause them to unite in one large bubble (Fig. 10).

Fig. 11 shows the steps required to blow a bubble over a spool. After



blowing this bubble you can place a smaller one inside on top of the spool (C, Fig. 11). A small doll's head can be inclosed in a bubble, as shown in Fig. 12, and there are many other tricks which can be carried out.

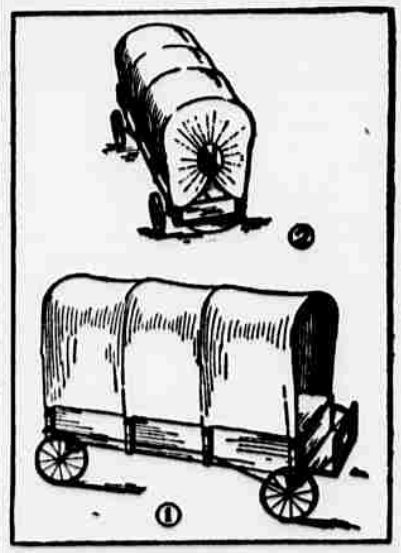
HANDICRAFT FOR BOYS

By A. NEELY HALL

Author of "The Handy Boy," "The Boy Craftsman," "Handicraft for Handy Boys," etc.

A CAMP WAGON.

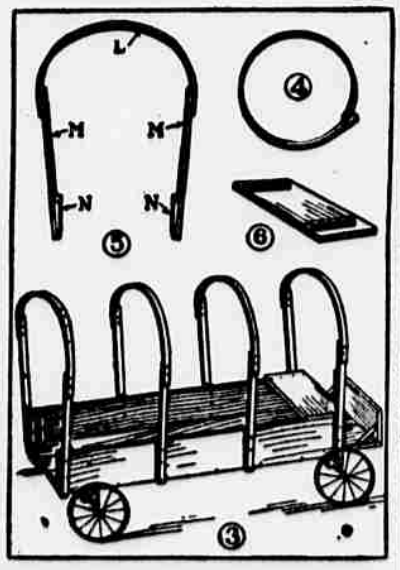
First you must get two pairs of wheels. If you haven't any, you will most likely find a boy who is willing to sell his wheels or make a trade. By laying flat upon the ground you can determine the proportions necessary for a wagon to sleep in. The iron axles that belong to your wheels will probably be too short. To lengthen them, get a piece of iron pipe just



large enough for them to slip into. Go to a blacksmith or a machinist, and have him first cut each axle in half, and the iron pipe in two pieces of the width of the wagon box, and then rivet the axle halves in the ends of the pipe (Fig. 10).

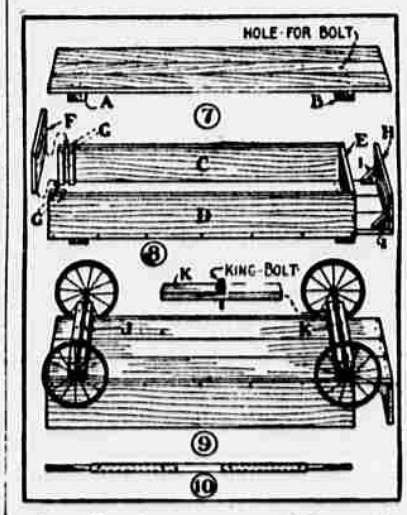
Fig. 7 shows the wagon bed. Fasten the boards together by means of the two-by-four crosspieces A and B. Then cut the side boards C and D and nail them to the edges, and cut the end boards E and F to fit between. Fasten end E between the sides, and form grooves by means of the strips G (Fig. 8) for the end F to drop into. Dashboard H is of the same size as E. Brace it with the brackets I.

The wheel axles must be stapled to the two two-by-fours J and K (Fig. 9).



Make these pieces of the length of crosspieces A and B (Fig. 7). Nail J to crosspiece A, and pivot K at its center to crosspiece B with a carriage bolt long enough to extend through K, B, and the wagon bed. Enlarge the hole in K so the bolt head will set down flush and allow the iron axle to pass over it. In bolting on the front wheels, slip an iron washer over the carriage bolt so that it will come between crosspieces K and B, and place another next to the bolt nut.

Fig. 3 shows the wagon with the frames for the top covering in position. Separate the ends of four barrel hoops (Fig. 4) for the arched tops of the frames (L, Fig. 5), and nail each to a pair of stick uprights (M). Then nail a pair of wedge-shaped blocks (N, Fig. 5) to the uprights, so



when the frames are nailed to the wagon box sides, the uprights will slant outward (Fig. 3).

Make the front seat out of a board, with cleats nailed across its under side (Fig. 6) to fit close against the sides of the wagon box. This seat must be removable if you intend to use the wagon to sleep in.

Figs. 1 and 2 show how to attach lines to the axles, and carry them around the sides, through screw eyes, to the back, for steering when pushing the camp wagon. Another pair of lines may be provided for pulling the wagon.